Certificate Programs
at the
HHSDC Training Center

The PC Support
Certificate Program

The Program

The HHSDC Training Center is offering the **PC Support Certificate** to any students who complete all of the following courses:

- *PC Support and Troubleshooting – Level 1 –* Introduces the student to first level PC support, troubleshooting and networking techniques.

- *PC Support and Troubleshooting – Level 2 –* Covers essential PC trouble-shooting, diagnostic and repair skills.

- *PC Support and Troubleshooting – Level 3 –* Teaches advanced PC troubleshooting and data recovery techniques.

If you have attended any of these courses previously they will count towards earning the certificate.

How to Obtain a Certificate

While you are on-site attending the final course in your program, notify the HHSDC Training Office that you are about to complete the program. A special certificate will be prepared and awarded to you upon completion of the final class.

Tuition Discount

If you complete the program within a 12-month period, you will receive 10% off the total tuition. The total discount will be taken in the final class.

These courses may also be taken as stand-alone classes provided you meet all prerequisites. It is not necessary to pursue a certificate in order to attend any of the courses.

HEALTH & HUMAN SERVICES DATA CENTER
HHSDC Training Center
9323 Tech Center Drive, Ste. 100
Sacramento, CA 95826
(916) 739-7502
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PC Support Course Schedule
July 2004 through June 2005

Course Title	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
PC Support and Troubleshooting – Level 1			20-24				10-14				16-20	
PC Support and Troubleshooting – Level 2				25-29				7-11		11-15		13-17
PC Support and Troubleshooting – Level 3						6-9						20-23

Registration Information

Satisfaction guaranteed or your money back

To enroll in a class at HHSDC, please have your training coordinator call the HHSDC Training Center Registration Line at 739-7502. We will take all enrollment and billing information over the phone, then send the training coordinator written confirmation and a map to HHSDC for each student.

Cancellations and *requests to reschedule enrolled students MUST* be made by *TEN (10) WORKING DAYS PRIOR TO THE FIRST DAY OF CLASS* or the department will be required to pay the full course fee. Substitutions may be made at any time.

All training classes are held at the HHSDC Training Center at 9323 Tech Center Drive. Tech Center Drive is located one block south of the intersection of Folsom Blvd. and Mayhew Road, between Watt and Bradshaw. **The classes will be in session each day from 8:15 A.M. to approximately 4:30 P.M.** Plenty of free parking is available.

Additional Program Information

All courses are developed and taught by **John Roduik** of Computer Training Institute.

AUDIENCE: Both the experienced technician and the non-technical professional alike will benefit from this program. All topics are taught from the ground up. If you:

- *are responsible for PC maintenance and support*
- *are a network administrator*
- *work on a help desk*
- *manage PC technicians or contractors*
- *support end users*
- *procure PC or networking equipment*

this program was designed for you.

All courses feature extensive hands-on workshops and exercises to reinforce the lessons taught and provide students with an opportunity to practice the skills learned. Students receive many accessories and tools in addition to the course manuals in each class.

PC Support and Troubleshooting – Level 1

Formerly *The PC Coordinator Survival Course*

LENGTH: 5 days   **TUITION:** $1,425

PREREQUISITES: None

AUDIENCE: This course is designed for PC Support personnel, managers, procurement agents, and non-technical professionals who need to develop a hands-on knowledge of personal computers. This course also provides new PC and LAN technicians with the needed foundation prior to attending the *PC Support and Troubleshooting – Level 2* course offered at HHSDC.

COURSE DESCRIPTION: This course was designed to provide first level support personnel with the troubleshooting tools and knowledge to solve common PC, LAN and user problems to minimize downtime. This course focuses on areas that relate to situations faced daily by Help Desk personnel, and first level PC and LAN

technicians. This course focuses on six areas consisting of:

- **PC Hardware Overview** introduces you to the components of a personal computer (PC) system, and provides you with hints for choosing, configuring, upgrading or buying a new system. This session will discuss the interaction of the PC hardware with your application programs and other hardware devices. New technologies and their usefulness will be covered. This session will also explain issues that are pertinent configuring and maintain your systems.

- **Operating Systems** explains how Windows 9x and 2000 fit into the picture, and explains how to control and customize the Windows environment focusing on the Control Panel, Device Manager and the Registry files.

- **Installing, and Configuring Windows Applications** gives you a crash course in some of the behind-the-scenes features of Windows applications. The steps you learn will apply to almost every Windows application.

- **Local Area Networking** explains how to setup TCP/IP networking and Internet connections. You will interpret local area network settings and components such as TCP/IP addresses, routers, gateways and firewalls. You will browse the World Wide Web locating information to assist in supporting PCs and applications. During the in-class labs you will configure a TCP/IP network using a combination of hubs, switches and gateways, setup shared files and printers, and connect to the Internet. You will explore some of the operating system's built-in network troubleshooting tools and techniques to determine points of failure.

- **Choosing and Installing Peripherals** shows you how to enhance systems by adding modems, sound cards, CD-ROMS, CD/RW, DVDR/RW, video accelerators and memory. Identify and avoid common installation pitfalls.

- **Troubleshooting common PC problems** – here we'll show you how to lend a helping hand when things go on the fritz. We'll address problems at startup or with applications. We will also show you techniques to improve drive performance and deal with viruses, malfunctioning hardware, and program or operating system glitches. Learn how to control the operating system and isolate boot up and shut down problems.

COURSE OBJECTIVES: By successfully completing this course, each student will learn to:

√ *understand basic personal computer terminology;*
√ *develop an understanding of the various components such as disk drives, displays, modems, tape drives and CD-ROM drives, including their function and benefits;*

√ *install and configure a peer-to-peer local area network;*
√ *develop the tools needed to evaluate purchase options and evaluate various systems;*
√ *set up a new computer system;*
√ *perform basic maintenance procedures;*
√ *understand and work with the Windows operating system including the Control Panel and Device Manager;*
√ *install and remove Windows programs and Windows components;*
√ *setup and configure a TCP/IP network using hubs and switches;*
√ *understand the roles of networking components including gateways, firewalls, routers and bridges:*
√ *understand what the Internet is and how to use it to become productive:*
√ *use network diagnostic programs such as WINIPCFG, PING NETDIAG and TRACERT;*
√ *download and update files and drivers from the web;*
√ *search for information such as updated drivers from manufacturers to optimize your equipment or solve compatibility issues;*
√ *add and setup both local and network printers in Windows;*
√ *configure hardware using the Windows Control panel;*
√ *understand how to install an adapter card;*
√ *understand how to install and set up a fax/modem;*
√ *understand how to add a second hard disk drive, CD-ROM, or tape drive;*
√ *understand how to add USB devices;*
√ *understand how to upgrade the video;*
√ *understand how to upgrade memory;*
√ *understand how to deal with common system problems such as system and application program lockups;*
√ *perform hard disk maintenance operations such as DEFRAG and ScanDisk;*
√ *understand common disk error messages;*
√ *address common monitor, printer, mouse, and modem problems;*
√ *use the Backup and Restore programs; and*
√ *use a virus checker.*

PC Support and Troubleshooting – Level 2

Formerly *Hands-On PC Troubleshooting and Repair*

LENGTH: 5 days   **TUITION:** $1,475

PREREQUISITES: Basic familiarity with using IBM personal computers and compatibles, and a good working knowledge of Windows, is required. Successful completion of the training course *PC Support and Troubleshooting – Level 1*, or equivalent knowledge or experience, is required.

AUDIENCE: This course is designed for those who are responsible for the support, repair and maintenance of your organization's personal computers.

COURSE DESCRIPTION: Following up *PC Support and Troubleshooting – Level 1*, this course provides a clear approach to tackling more complex and technical PC troubleshooting problems. Through lecture and hands-on exercises, students will learn techniques for diagnosing and troubleshooting hardware and operating system problems. Topics covered include:

- Introduction to today's advanced PC technology (CPU design, cache, wait states, etc.)
- Understanding the expansion bus technologies (ISA, PCI, AGP, USB, Firewire and CNR)
- Examining the system configuration using the both basic and advanced BIOS settings
- Completely disassembling, reassembling and configuring the PC
- Introduction to basic electronics and system testing techniques
- Testing your PC including the power supply and disk drives
- Troubleshooting startup problems using the computer's built-in beep codes and Power On Self Test
- Partitioning, formatting and reformatting hard drives.
- Changing Windows filing structures (FAT - NTFS)
- Installing, configuring and upgrading Windows
- Troubleshooting Windows boot-up related problems
- Creating emergency boot and diagnostic diskettes
- Troubleshooting hard disk drives
- Recovering lost data
- Troubleshooting memory related problems

Course Books and Tools: Each student will receive a comprehensive course manual, a digital multimeter, the Pocket PCRef book (an invaluable reference tool), utility software, as well as a tool kit specially designed for PC troubleshooting and repair.

Hands-on Labs: Twenty labs are included to reinforce the topics presented. The lab topics include:

1. Complete computer disassembly: you will remove and identify the motherboard, expansion cards, disk drives, power supply, and connectors.
2. PC Maintenance: learn the proper techniques for component removal, handling and cleaning to keep your system in working order.
3. You will learn how to examine and document your system to prevent Interrupt, DMA, and I/O address conflicts.
4. Using a multimeter you will examine, measure voltages and identify causes of component failure and test your system power supply.
5. Reassemble the computer and learn to troubleshoot boot-up problems and failures. You will reinstall the memory, motherboard, power supply, disk drives, and boards to reinforce your in-depth understanding of PC architecture.
6. Examine how the BIOS and operating system are used to isolate various points of failure. Access and configure the Advanced BIOS options.

(Labs continued)

7. Examine Power On Self Test (POST) Beep and Error Codes: you will use the POST codes to zero in on exact points of failure.
8. Troubleshooting the Motherboard: in this lab you will learn to recognize important error codes and signals including the power good signal to the CPU. Perform voltage checks, examine RAM problems, and motherboard related POST errors.
9. Troubleshooting hard drive problems: learn to recognize different types of drives and understand the techniques used to configure drives
10. Completely set up a hard drive from scratch including Partitioning and Formatting.
11. Install Windows, and examine the system and configuration files.
12. Examine the Windows step-by-step boot sequence to isolate points of failure.
13. Examine how the operating system uses memory, and use various memory technologies to determine their effect on system performance.
14. Troubleshooting operating system related boot problems.
15. Create emergency boot and troubleshooting diskettes.
16. Examine the differences and similarities between Windows 9x and Windows 2000 disk structures.
17. Examine various system resources including the Partition Table, Boot Record, File Allocation Tables, and Directories.
18. Use and understand the system tools including ScanDisk, CHKDSK, and DEFRAG.
19. Learn to properly use "Ghost" scripts to clone disk drives
20. Change the partition size and file structure without data loss.

COURSE OBJECTIVES: By successfully completing this course, each student will learn to:

√ *use proven methodologies to simplify complex PC problems;*
√ *use time-saving steps to prepare your hard drive;*
√ *learn to install and configure and upgrade Windows;*
√ *prevent system crashes to maximize "up time";*
√ *use configuration techniques to avoid PC hang-ups, response failures, and intermittent errors such as data loss and associated problems;*
√ *understand the jargon and acronyms associated with personal computer repair, maintenance, and troubleshooting;*
√ *learn to use sophisticated diagnostic and repair techniques to get a failed PC, monitor, or printer up and running again;*
√ *apply advanced techniques and skills to troubleshoot and repair personal computer equipment;*
√ *manage preventive maintenance techniques;*
√ *master accurate troubleshooting skills;*
√ *isolate memory problems;*
√ *recover lost data on floppy and hard disk drives; and*
√ *avoid the real cost of failures and downtime.*

PC Support and Troubleshooting – Level 3

Formerly *Data Recovery Techniques and Disk Drive Troubleshooting*

LENGTH: 4 days   **TUITION:** $1,195

PREREQUISITE: Basic familiarity with IBM personal computers and compatibles, and a good working knowledge of Windows, is required. Successful completion of the training course *PC Support and Troubleshooting – Level 2* or equivalent experience is required.

MATERIALS: As part of the course materials, each student will receive a copy of the Norton Utilities program from Symantec Software as well as other utilities. During the course the student will develop an in-depth knowledge of the products and use them during the hands-on labs. You may then take the software with you back to your worksite to use in your job.

AUDIENCE: This course is designed for those who are responsible for the repair and/or maintenance of your organization's IBM and compatible personal computers.

COURSE DESCRIPTION: You learned hardware and operating system troubleshooting in *PC Support and Troubleshooting – Level 2*. Now, through lecture and extensive hands-on exercises, this course will provide a thorough understanding of software troubleshooting, disk drive structure and data recovery techniques. Topics covered include:

- Introduction to Disk Drive Structure
- Advanced Drive Concepts
- Testing The Computer Hardware
- Creating a Basic Rescue Disk Set
- Recovering From a System Crash
- Unformatting a Disk
- Unerasing Files
- Repairing General Hardware Problems
- Correcting CMOS Related Problems
- Recovering Operating System Files
- Repairing a Malfunctioning Hard Disk
- Accessing Data on a Damaged Floppy Disk

- Recovering Files on a Disk That Appears Empty
- Recovering Data on a Formatted Or Severely Damaged Disk
- Performing a Pre-recovery Backup
- Repairing a Disk With Incorrect Media Descriptor Byte Information
- Recovering Lost or Damaged Directories
- Recovering Overwritten Files
- Recovering Corrupt Registry Files
- Recovering an Inaccessible Disk
- Using a Disk Sector Editor
- Recovering an Unbootable Hard Disk
- Recovering Lost Subdirectories From a Corrupt Directory
- Lifting Data From a Corrupt or Physically Damaged Hard Disk
- Repairing Cross-Linked Files
- Repairing Damaged Partition Tables
- Repairing Damaged Boot Records
- Repairing Damaged File Allocation Tables
- Working with the NTFS filing structure
- Working from the command prompt when Windows won't load
- The Command Line Syntax
- The Built-in (Internal) Commands
- Examining and debugging the INI Startup File Entries
- Examining the Windows Registry Structure
- Examine the Registry Hkey_ Entries
  - Hkey_Local_Machine
    - Config Subtree
    - Enum Subtree
    - Software Subtree
    - System Subtree
  - Hkey_Current_User and Hkey_Users
  - Hkey_Current_Config and Hkey_Dyn_Data
- WIN.INI Settings in the Registry
- SYSTEM.INI Settings in the Registry
- Using the Registry Editor to Modify the Windows Registry

- Using the Tweak UI to Modify the Windows Registry
- Repairing or replacing a corrupted Registry
- Using NTFS Specific Disk Utilities

COURSE OBJECTIVES: *By successfully completing this course, each student will learn to:*

√ *use proven methodologies to simplify complex hard disk problems;*
√ *prevent system crashes to maximize "up time";*
√ *apply advanced techniques and skills to troubleshoot and repair disk drives;*
√ *manage preventive maintenance techniques;*
√ *master data recovery skills;*
√ *isolate disk problems;*
√ *recover lost data on floppy and hard disk drives;*
√ *avoid the real cost of failures and downtime; and*
√ *apply advanced techniques and skills to troubleshoot and repair the Windows Registry.*

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